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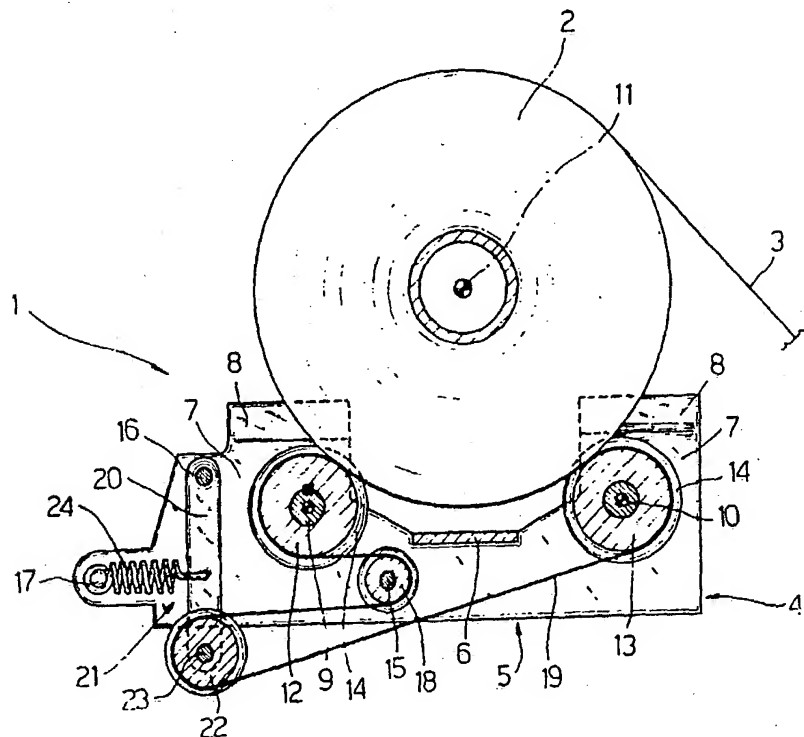
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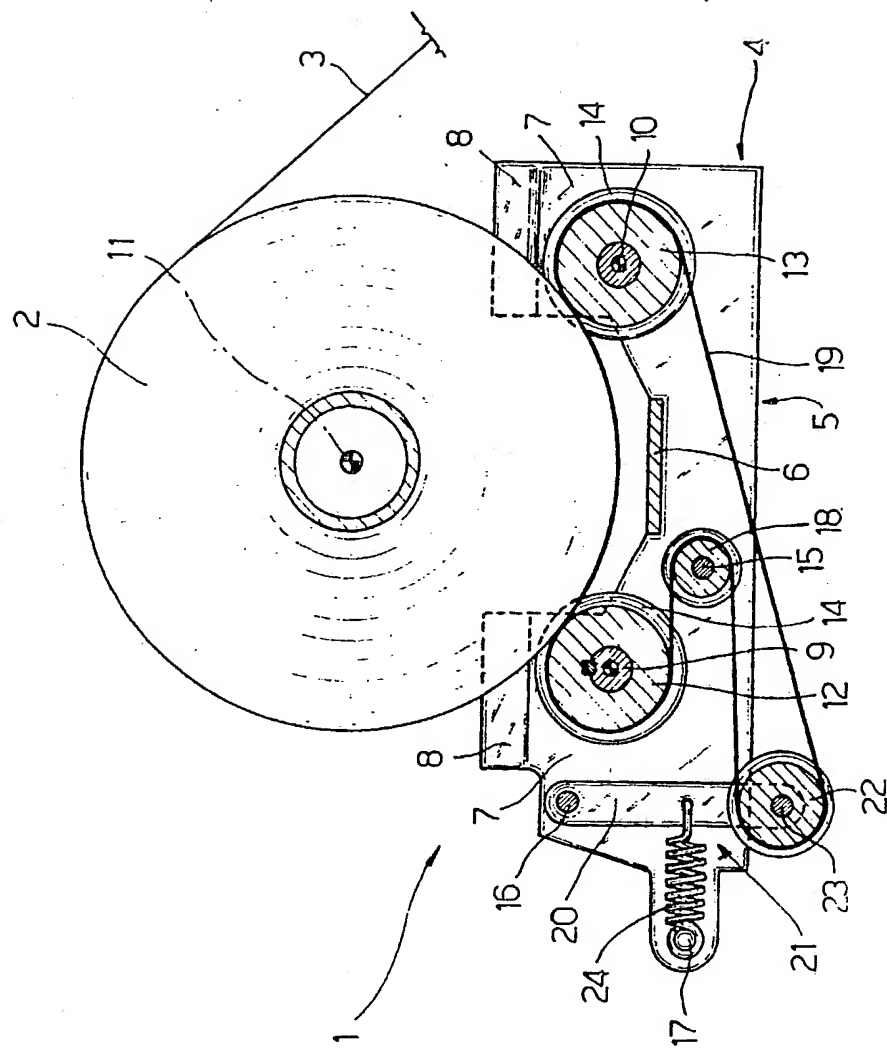
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(54) Centerless unwinding device for reels of strip material

(57) A centerless unwinding device for reels of strip material (3), wherein the reel (2) is supported on a saddle (4) having two flanged rollers (12, 13), at least one (12) of which is powered, and about which is wound a belt (19) having a branch extending in contact with an outer peripheral portion of the reel (2) between the two rollers (12, 13).



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CENTERLESS UNWINDING DEVICE FOR REELS OF STRIP MATERIAL

The present invention relates to a centerless unwinding device for reels of strip material.

Known devices for the centerless unwinding of reels of strip material comprise a supporting saddle having two rollers, at least one of which is powered, on which the reel for unwinding is placed on edge. The two rollers are obviously set up far enough apart to ensure stable support of both a full and empty reel, and normally present lateral flanges for laterally retaining the reel and laterally guiding the strip as it is unwound.

The main drawback of known devices of the aforementioned type is that the small contact surface between the feed rollers and the reel as it is unwound may result in slippage between the rollers and the reel, in turn resulting in irregular speed of the reel itself. As a consequence of this irregularity in the speed of the reel, the strip portion extending about the periphery of the reel between the two rollers may work loose and shift sideways, thus resulting in damage to the strip

due to interference with the lateral flanges of the feed rollers.

It is an object of the present invention to provide a centerless unwinding device designed to overcome the aforementioned drawback.

According to the present invention, there is provided a centerless unwinding device for reels of strip material, comprising a saddle for supporting on edge and feeding said reel; said saddle comprising two feed rollers, at least one of which is powered, rotating about respective axes parallel to the rotation axis of said reel, and each having lateral flanges located, in use, on opposite sides of said reel; characterised by the fact that it also comprises belt means wound about said two rollers; said belt means comprising a branch extending, in use, contacting an outer peripheral portion of said reel between said rollers.

The belt wound about the feed rollers on the above device provides not only for controlling lateral shift of the strip portion between the two rollers, but also for increasing the distance between the feed rollers and so enabling the saddle to support the reel more stably as it is unwound.

The invention will be described with reference to the accompanying drawing showing a schematic vertical longitudinal section of a preferred embodiment of the device according to the present invention.

Number 1 in the accompanying drawing indicates a centerless unwinding device for a reel 2 of strip material 3.

Device 1 comprises a saddle 4 for supporting reel 2 on edge, and defined by two vertical, substantially U-shaped plates 5 (only one of which is shown) arranged facing each other. Plates 5 are connected integral with each other by a central cross member 6, and each present, at each lateral end, an upward-facing arm 7 terminating in a tab 8 bent facing the other plate 5 and defining, with tab 8 on the other plate 5, a passage (not shown) substantially as wide as the thickness of reel 2, for laterally guiding reel 2 as strip 3 is unwound, and limiting oscillation of reel 2 crosswise in relation to its vertical plane.

According to a variation not shown, at least one pair of facing tabs 8 may be dispensed with.

Device 1 also comprises two shafts 9 and 10, of which at least shaft 9 is powered, extending horizontally through facing pairs of arms 7 of plates 5, perpendicular to plates 5 and parallel to the rotation axis 11 of reel 2. Shaft 9 is fitted with a first feed roller 12, while shaft 10, if not powered, supports in idle manner a second feed roller 13. Both rollers 12 and 13 are located between plates 5, and each presents lateral flanges 14 located, in use, on opposite sides of reel 2 for limiting lateral shift of reel 2 as it is unwound.

Saddle 4 also comprises three pins 15, 16 and 17. Pin 15 supports in idle manner a flanged guide roller 18 for a belt 19 wound about rollers 12 and 13 and comprising a branch extending between rollers 12 and 13 and positioned, in use, contacting an outer peripheral portion of reel 2. Pin 16 supports a rocking lever 20 of a tensioner 21 also comprising a flanged roller 22 engaged by belt 19 and mounted for rotation about a pin 23 integral with lever 20 and parallel to axis 11. Pin 17 hooks on to one end of a spring 24 forming part of tensioner 21 and the other end of which is connected to the mid portion of lever 20.

The presence of belt 19 clearly provides, therefore, for effectively controlling the position and tension of the portion of strip 3 extending about the outer periphery of reel 2 between rollers 12 and 13, thus preventing strip 3 from sliding and interfering with flanges 14 of rollers 12 and 13.

CLAIMS

1) - A centerless unwinding device for reels of strip material, comprising a saddle for supporting on edge and feeding said reel; said saddle comprising two feed rollers, at least one of which is powered, rotating about respective axes parallel to the rotation axis of said reel, and each having lateral flanges located, in use, on opposite sides of said reel; characterised by the fact that it also comprises belt means wound about said two rollers; said belt means comprising a branch extending, in use, contacting an outer peripheral portion of said reel between said rollers.

2) - A device as claimed in Claim 1, characterised by the fact that said saddle comprises two facing plates; said two feed rollers being mounted for rotation between said two plates.

3) - A device as claimed in Claim 2, characterised by the fact that guide means are provided on said plates for laterally guiding said reel as it is unwound.

4) - A device as claimed in any one of the foregoing Claims, characterised by the fact that it also comprises a device for tensioning said belt.

5) - A centerless unwinding device for reels of strip material, substantially as described and illustrated herein with reference to the accompanying drawing.